

Executive Registry

1969

Mr. A. T. Samuelson  
Director, Civil Division  
General Accounting Office  
Washington, D. C. 20548

Dear Mr. Samuelson:

The Director has asked me to respond to your letter of 17 March 1969 and your comprehensive draft report on the National Communications System (NCS) progress.

We agree with your recommendations for a strengthened and independent policy making body within the Executive Branch. We believe, however, that this entity should devote itself to policy making and the issuance of policy guidance. For this reason we do not favor having the roles and functions of the Executive Agent and the Manager, NCS, assigned to the new organization. We suggest that this latter proposal could be examined more effectively subsequent to the establishment of the proposed policy office.

Our planning for the operation of this Agency's communications system, which of necessity must be mission-oriented, has increasingly taken into consideration the national objective of greater unification and collaboration among operating agencies. As a result, we have endorsed the Long Range Integrated Training System Concept. We have also

ILLEGIB

/s/ L. K. White

L. K. White

Executive Director-Comptroller

Originator:

R. L. Bannerman  
Deputy Director

ILLEGIB

7 MAY 1969

DD/S 69-2128

Letter dated \_\_\_\_\_ to the Director, Civil Division, GAO,  
from the Director, re GAO draft report on the National Communications  
System (NCS)

CONCURRENCES:

<u>/s/ Lawrence R. Houston (on orig)</u>	<u>6 May 69</u>
General Counsel	Date

<u>/s/ John M. Maury (on orig)</u>	<u>6 May 69</u>
Legislative Counsel	Date

Concur in substance	
<u>/s/ John M. Clarke (on orig)</u>	<u>6 May 69</u>
Director of Planning, Programming & Budgeting	Date

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O/D/CO: [REDACTED] NCS Rep.  
Rewritten: ADD/S: JWC/ms (7 May 69)  
Distribution:

- Orig & 1 - Adse
- 1 - ER, w/O of Basic, w/O its Att (DD/S 69-1175)
  - 1 - Ex. Dir.-Compt., w/cy of Basic only
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  - 1 - DD/S Subject, w/cy of Basic only

DD/S 69-1175: Ltr dtd 17 Mar 69 to the Director fr Director, Civil  
Division, GAO, re above subj w/cy of GAO report.

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UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

DD/S

CIVIL DIVISION

MAR 17 1968

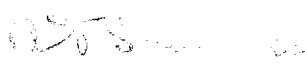
Dear Mr. Helms:

Enclosed for your information and any comments you may wish to make are five copies of a draft report on our study of the progress made toward establishment of a unified national communications system (NCS).

Your attention is directed to the limitations on the use of this draft as indicated on the report cover. We request that appropriate safeguards be imposed to prevent premature or unauthorized use of this report.

Should you wish to give us your comments on this draft report, we would appreciate receiving them within 60 days from the date of this letter. If you or your representatives wish to discuss this matter or require any additional information, please contact Mr. Hassell B. Bell, Associate Director.

Sincerely yours,

  
A. T. Samuelson  
Director

Enclosures - 5

The Honorable Richard Helms  
Director, Central Intelligence Agency

Approved For Release 2002/01/10 : CIA-RDP71B00364R000100110001-4

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2 April 1969


MEMORANDUM FOR THE RECORD

SUBJECT: Establishment of a Unified Communications System

1. The attached is a draft report prepared by GAO and the Office of Communications is preparing an Agency position. I do not believe OLC has any comments or suggestions to provide the Director of Communications in this respect and therefore recommend that we treat our receipt of it for information only.
2. It is recalled that Frank Slatinshek, House Armed Services Committee staff, was particularly interested in the Agency's communications system and its tie-in with the Defense Communications System. The draft report does not specifically mention the CIA's communication network, nor its tie-in with other communications networks. Further, the draft report is restricted as to use as noted on the report cover and is intended for the Congress. Therefore, it would seem that OLC should not take any initiative in informing Frank Slatinshek of our receipt of the draft report or of our position with respect to it. However, we may be questioned by our Hill clients on it, eventually.
3. Of interest is that the principal recommendation in the report is based upon earlier recommendations of the House Committee on Government Operations to remove the policy direction of the National Communications System from the Office of Emergency Preparedness and establish it in a separate entity at the highest level of the Executive Branch. This would increase the stature of the policy role, perhaps making policy formation more susceptible to congressional direction, etc. The report also recommends relieving the Secretary of Defense of his present role as Executive agent and manager of the National Communications System and transferring this operational/management role to the new entity, thus increasing the power of the new entity and removing the conflict of interest facing the Secretary of Defense as prime user of the National Communications System and as Executive agent for other Government agencies.

STATINTL

Assistant Legislative Counsel

SENDER WILL CHECK CLASSIFICATION TOP AND BOTTOM			
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<b>OFFICIAL ROUTING SLIP</b>			
TO	NAME AND ADDRESS	DATE	INITIALS
1	Legislative Counsel Rm 7D43, Hqs		<i>gm</i>
2	<i>LLM</i>		<i>gm</i>
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ACTION		DIRECT REPLY	PREPARE REPLY
APPROVAL		DISPATCH	RECOMMENDATION
COMMENT		FILE	RETURN
CONCURRENCE		INFORMATION	SIGNATURE
<b>Remarks:</b>  <p>The attached are provided for your information. The Office of Communications is analyzing the GAO report and will propose an Agency position and/or comments. Please contact the Director of Communications if you have any comments or suggestions.</p> <div style="text-align: center;">               John W. Coffey         </div> <p>Atts</p>			
FOLD HERE TO RETURN TO SENDER			
FROM: NAME, ADDRESS AND PHONE NO.		DATE	
Assistant Deputy Director for Support 7D18, Hqs		10 MAR 1969	
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UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

CIVIL DIVISION

MAR 17 1969

Dear Mr. Helms:

Enclosed for your information and any comments you may wish to make are five copies of a draft report on our study of the progress made toward establishment of a unified national communications system (NCS).

Your attention is directed to the limitations on the use of this draft as indicated on the report cover. We request that appropriate safeguards be imposed to prevent premature or unauthorized use of this report.

Should you wish to give us your comments on this draft report, we would appreciate receiving them within 60 days from the date of this letter. If you or your representatives wish to discuss this matter or require any additional information, please contact Mr. Hassell B. Bell, Associate Director.

Sincerely yours,

/s/  
A. T. Sammelson  
Director

Enclosures - 5

The Honorable Richard Helms  
Director, Central Intelligence Agency

**DRAFT**

SS-57

REPORT TO  
THE CONGRESS OF THE UNITED STATES  
STUDY OF THE PROGRESS MADE  
TOWARD ESTABLISHMENT OF  
A UNIFIED  
NATIONAL COMMUNICATIONS SYSTEM  
(CODE 07510)

**NOTICE -- USE RESTRICTED**

This document is a *draft* of a proposed report of the General Accounting Office. It is subject to revision, does not necessarily contain final conclusions, and is being made available solely to those having responsibilities concerning the subjects discussed for their review and comment to the General Accounting Office.

Recipients of this draft must not show or release its contents for purposes other than private review and comment under any circumstances. At all times it must be safeguarded to prevent premature publication, or similar improper disclosure, of the statements or information contained therein.

BY  
THE COMPTROLLER GENERAL  
OF THE UNITED STATES

**DRAFT**



UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

DEFENSE DIVISION

MAR 17 1969

The President  
The White House

Attention: Special Assistant to the President  
for Telecommunications

Dear Mr. President:

Enclosed for your review and comment are five copies of a draft report on our study of the progress made toward establishment of a unified national communications system (NCS).

Your attention is directed to the limitations on the use of this draft as indicated on the report cover. We request that appropriate safeguards be imposed to prevent premature or unauthorized use of this report.

We would appreciate receiving your comments on this draft report within 60 days from the date of this letter. If you or your representatives wish to discuss this matter or require any additional information, please contact Mr. Hassell B. Bell, Associate Director.

Copies of this draft report are also being sent to the Executive Agent, NCS; the Manager, NCS; the major and minor NCS operating agencies; the Office of Emergency Preparedness; the Bureau of the Budget; the Veterans Administration; the Defense Communications Agency; and the Defense Supply Agency.

Respectfully yours,

A handwritten signature in cursive script, reading "E. M. Bailey", is written over the typed name "E. M. Bailey".

Director

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PRINCIPAL ABBREVIATIONS

Advanced Record System	(ARS)
Automatic Digital Network	(AUTODIN)
Automatic Voice Network	(AUTOVON)
Bureau of the Budget	(BOB)
Defense Communications Agency	(DCA)
Defense Communications System	(DCS)
Defense Telephone Service	(DTS)
Department of Defense	(DOD)
Department of State	(DOS)
Director of Telecommunications Management	(DTM)
Federal Aviation Administration	(FAA)
Federal Telecommunications System	(FTS)
General Accounting Office	(GAO)
General Services Administration	(GSA)
National Aeronautics & Space Administration	(NASA)
National Communications System	(NCS)
Office of Emergency Preparedness	(OEP)
Special Assistant to the President for Telecommunications	(SAPT)

## D I G E S T

### WHY THE STUDY WAS MADE

On August 21, 1963, the President directed the establishment of a National Communications System (NCS) in order to strengthen the communications support of all major functions of Government. The system was to be established and developed as a unified Governmental system by linking together, improving, and extending on an evolutionary basis, the communications facilities and components of the various Federal agencies. The objective was to provide necessary communications for the Federal Government under all conditions ranging from a normal situation to national emergencies and international crises, including nuclear attack. (See Chapter 3.)

The Government's telecommunications needs are varied, complex, world-wide in scope, and often times very costly. With the advent of elaborate computerized management information system development throughout the Government, and the further advancement in telecommunications technology, increased requirements for telecommunications will inevitably develop. Although precise data are not available, the Government's total telecommunications costs have been estimated to amount to approximately \$4 billion annually. Of this total, about \$1 billion has been estimated to be associated with the NCS. (See Chapter 1.) Because of the size of this expenditure and Congressional interest in telecommunications problems, the General Accounting Office (GAO) studied the progress made in establishment of a unified NCS.

### FINDINGS AND CONCLUSIONS

Although over five years have elapsed since the President directed its establishment, the objectives of a unified NCS have not been fully achieved. (See Chapter 6.) The NCS has provided a forum for the interchange of ideas between agency communications staffs and some progress has been made toward accomplishing the objectives for which the NCS was established. (See Chapter 5.) The more significant and broader objective of achieving a unified Governmental communications system as the President directed is yet to be accomplished. A number of problems exist which are hampering accomplishment of this NCS objective.

Except for the President of the United States, there is no individual or organization in the Federal Government with the authority, stature, and resources to provide effective policy direction and management of a unified Governmental telecommunications system. Authority and responsibility for telecommunications decisions and activities are widely dispersed among the various departments and agencies involved. The corresponding and fundamental design and planning process is performed largely in an agency oriented environment rather than in a NCS frame-of-reference. (See Chapter 9.)

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Consequently, there is no basic plan or "blueprint" to chart the course of the NCS from its present confederation of agency networks configuration to the goal of a unified system. Even if such a blueprint existed, there is no effective or authoritative overview to assure that agency planning and funding would conform to the overall plan. (See Chapter 9.) As a result, the perpetuation and even proliferation of networks, which are used largely for the accomplishment of individual agency missions, continues since these networks are designed, planned, funded, operated, and maintained by the individual agencies. The NCS management has little, if any, participation in the development and improvement of the agency networks and no assurance that national objectives will be met by their continuation or proliferation. (See Chapter 10.)

#### RECOMMENDATIONS OR SUGGESTIONS

GAO is recommending that the President give consideration to:

- Undertaking a major realignment of the existing NCS structure and organizational arrangements to establish an organization or entity at the highest level of the Executive Branch of Government with sufficient stature, authority, and resources to provide a strong central telecommunications authority which would enhance the development of the NCS and serve as the Government's single voice and final authority in telecommunications matters.

In undertaking the realignment, GAO is recommending that consideration be given to:

- Removing the Office of the Director of Telecommunications Management (DTM) as a component part of the Office of Emergency Preparedness (OEP) and reconstituting this office as the new organization or entity.
- Assigning the present roles and functions of the Executive Agent, NCS, and Manager, NCS, to the proposed organization or entity.

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## CHAPTER 1

### THE NATIONAL COMMUNICATIONS SYSTEM

The National Communications System (NCS) originated formally with National Security Action Memorandum 252 of July 11, 1963. On August 21, that year, the President, in a memorandum to the heads of Executive Departments and Agencies, directed the establishing of a "unified Governmental communications system" through the NCS in order to strengthen all major functions of the Government.

As it has evolved the NCS is comprised of long-distance telecommunications systems of the,

General Services Administration (GSA),  
Department of Defense (DOD),  
Department of State (DOS),  
Federal Aviation Administration (FAA) and,  
National Aeronautics and Space Administration (NASA).

These agencies are referred to as NCS major operating agencies.

A description of their telecommunications systems follows.

#### GENERAL SERVICES ADMINISTRATION

Federal Telecommunications System (FTS)--a nationwide leased system of communications networks serving certain civil departments and agencies. It provides switched long-distance and local communications services to include terminal devices as required.

This system is composed of voice and record communications networks and/or systems. The voice grade network consists of several components and provides for common-user switched telephone and data traffic. The Advanced Record System (ARS) is designed to provide teletypewriter and data services.

#### DEPARTMENT OF DEFENSE

Defense Communications System (DCS)--a worldwide complex of DOD communications networks providing a variety of long-distance, point-to-point communications services. It serves the President, the Secretary of Defense, the Joint Chiefs of Staff, the military departments, and other Government agencies as directed.

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Major DCS projects currently being planned, implemented, or operated are the Automatic Digital Network, the Automatic Voice Network, the Defense Special Security Communications System, the Automatic Secure Voice Communications System, and the Communications Satellite Project.

The Automatic Digital Network (AUTODIN) is a worldwide network of communications facilities serving DOD and certain non-DOD customers in their particular geographic areas. It was designed for the secure transmission, control, and storage of message and data traffic.

The Automatic Voice Network (AUTOVON) is a worldwide communications network for the transmission of voice and graphic communications for DOD and certain non-DOD users.

The Defense Special Security Communications System was established to provide a secure intelligence communications network for the transmission of highly classified intelligence data. ✓

The Automatic Secure Voice Communications System was established to eventually provide voice transmission with inherent security capabilities to DOD agencies and agencies having national security responsibilities on a worldwide basis.

The Defense Satellite Communications System is intended to handle high-level military command and control communications on a worldwide basis by way of orbiting satellites.

#### DEPARTMENT OF STATE

Diplomatic Telecommunications System - This system is a worldwide network which serves U.S. diplomatic posts overseas. The system provides communications service for a number of civilian agencies and certain military components located at foreign service posts. International channels for the system are generally provided by the DCS. TRANS OCEANIC ✓

#### NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The NASA Communications Network is a separate self-contained system within the NCS which provides for the exchange of operational information between the project operations center, launch centers, scientific support centers, and tracking and data acquisition centers. Circuits in this network are installed under a mission dedicated concept where, during operating periods, the circuits are configured to provide continuous connection between the project operations center and the supporting station. During non-mission periods, the circuits are arranged for common use by all projects. This network is composed of both domestic and overseas voice, teletype and data nets.

#### FEDERAL AVIATION ADMINISTRATION

The FAA's component networks are to satisfy user requirements for the rapid collection and dissemination of aircraft movement and control

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messages, meteorological data, notices to airmen, international air carrier operational data messages, and command control information. Its networks serve United States and foreign Government and non-Government aeronautical and meteorological interests.

In addition, the NCS includes certain telecommunications systems of the Department of the Interior, Department of Commerce, Atomic Energy Commission (AEC), Federal Communications Commission, and the U.S. Information Agency. These agencies are referred to as NCS minor operating agencies.

A number of other agency communications networks exist which are not designated as NCS assets. ✓

In fulfilling its communication requirements, the Government relies heavily upon the communication industry. Within the United States, the Government's communications systems consist mostly of leased commercial services, equipment and facilities, while in overseas areas it is largely Government-owned. Transoceanic circuits are provided generally through leased cable or satellite facilities.

Although precise data are not available as to the Government's total annual expenditure for its variety of communications equipment, services, and research, one estimate we reviewed showed that the cost amounts to approximately \$4 billion. Of this total, about \$1 billion has been estimated to be associated with the NCS.

CHAPTER 2

COMMUNICATIONS PROBLEMS THAT GAVE  
RISE TO ESTABLISHING THE NCS

In the late 1950's most executive agencies participated in a series of alert exercises conducted by the Office of Civil and Defense Mobilization (OCDM). These exercises disclosed a need for improved communications. In November 1959, OCDM--now the Office of Emergency Preparedness (OEP)--recommended to the President that a unified Federal civil agency communications system be established. It proposed that the system provide for the day-to-day business of the Government and include features that would insure reliable communications during an emergency.

The proposal was approved subject to (1) a more precise study being conducted under the direction of the Administrator of GSA in order to determine feasibility and exact requirements, (2) resolution of certain questions regarding security requirements, and (3) a stipulation that the system developed be compatible with existing and planned military systems. The study was completed in June 1960.

On January 17, 1961, the Bureau of the Budget (BOB) advised the Administrator, GSA, that the President had approved the plan and authorized GSA to go forward on the establishment of the proposed communications system. The system became known as the FTS.

Communications systems being planned by the individual military services also became of concern in the late 1950's. Such systems were proceeding with little thought to compatibility between systems and it was recognized that the long-distance communications facilities of the



military services required streamlining and updating to satisfy more complex requirements. The outgrowth was the establishment of the Defense Communications Agency (DCA) as the single agency and DCS as the single system to meet the long-distance, point-to-point telecommunications requirements of the DOD.

Thus, in the early 1960's, it appeared that two major Federal telecommunications systems were emerging, the DCS, for which the DOD was responsible, and the FTS, for which the GSA was responsible.

However, there were other major Federal communications networks outside the framework of DCS and FTS. These included the system planned and operated by the DOS, the air route traffic control telecommunications of the FAA, the then expanding network, planned and operated by NASA, and other smaller civil networks.

By early 1962, the changing nature of the international situation caused a great deal of attention to be given to civil defense and continuity of Government programs. On February 14 of that year, the President directed the establishment of a committee to re-examine Federal policy with respect to these areas. As a result, an Emergency Planning Committee was formed consisting of representatives of the BOB, OEP, and the DOD.

The Committee issued its report on June 11. It concluded that there was a need to develop a survivable national communications system that would serve both the military and civil needs under all levels of emergency conditions. This appears to have been the first recognition of the need for a single system concept for all Federal telecommunications.

On June 25, the President approved the committee's report and formed a task group to further study the communications problem. This group analyzed the critical ~~communication~~ requirements of the President and top Government officials. Its report of August 20 set forth in more detail the need for and concept of a survivable national communications system.

While this report was under consideration, the crisis over Soviet missiles in Cuba arose. Many of the communication problems that were foreseen in the earlier studies suddenly became real, since time had not permitted implementation of solutions recommended earlier. Expeditious actions were needed.

On October 26, a subcommittee on communications was established under the National Security Council. This subcommittee initiated a number of actions directed toward telecommunications improvements.

In its final report of May 21, 1963, the subcommittee stated in part that "the most pressing, immediate requirement is to proceed with the actual creation of a National Communications System." The subcommittee's report proposed a National Security Action Memorandum for that purpose. The Memorandum was approved by the National Security Council and issued, as previously mentioned, July 11, 1963, formally directing the establishment of a National Communications System. ✓

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### CHAPTER 3

#### CONCEPT AND OBJECTIVES OF THE NCS

In his memorandum of August 21, 1963, to the heads of Executive Departments and Agencies, the President announced his decision to establish the NCS as a "unified Governmental communications system" in order to strengthen the communications support of all major functions of Government. The memorandum directed that the system,

"shall be established and developed by linking together, improving, and extending on an evolutionary basis the communications facilities and components of the various Federal agencies."

In defining the objectives of the NCS, the Presidential memorandum stated that it would serve to,

"provide necessary communications for the Federal Government under all conditions ranging from a normal situation to national emergencies and international crises, including nuclear attack."

The President stipulated that the system (1) be developed and operated to be responsive to the variety of needs of the national command and user agencies and be capable of meeting priority requirements under emergency or war conditions and, (2) provide the necessary combinations of hardness, mobility, and circuit redundancy to obtain survivability of essential communications in all circumstances.

The President directed that initial steps in developing the system would be toward meeting the most critical needs for communications in national security programs, particularly to overseas areas. He also directed that, as rapidly as is consistent with meeting critical needs, other Government needs be examined and satisfied, as warranted, in the context of the NCS.

The President recognized that the extent and character of the system required careful consideration in light of the priorities of need, the benefits to be obtained, and the costs involved. It was also recognized that design studies would be required and experience gained through actual practice before decisions could be reached as to just what form the NCS would take. It was generally conceived at the time, that the NCS would be comprised primarily of the long-distance, point-to-point, trunk communications which could serve one or more agencies.

Thus, it appears that two priorities were established; the first being to meet critical or emergency requirements and the second was to meet normal or day-to-day needs of the Government. Although a "unified" system was not specifically defined, it appears that the Government's telecommunications requirements were to be satisfied with consideration of efficiency, effectiveness, and economy, and in the context of a single system.

CHAPTER 4

ORGANIZATIONAL ARRANGEMENTS AND  
RESPONSIBILITIES FOR THE NCS

Through the Presidential memorandum, and a document entitled "Procedures and Working Relationships for the NCS," dated August 21, 1963, certain organizational arrangements and responsibilities were prescribed for the initial establishment and operation of the NCS. Responsibilities were specifically delineated for the Director of Telecommunications Management (DIM), Executive Office of the President; Secretary of Defense; Administrator, GSA; BOB; and all other Government agencies. ✓

The DIM, in carrying out his broad functions under Executive Orders 10705 and 10995, was given responsibilities for policy direction of the development and operation of the NCS. In this capacity, he also was designated to serve as a Special Assistant to the President for Telecommunications (SAPT) and given several functions to carry out, most of which concern the NCS. ✓

The Secretary of Defense was designated to serve as the Executive Agent for NCS, an apparent effort by the President to obtain the benefits of unified technical planning and operations. In that capacity, the Secretary of Defense was given responsibility for designing the NCS for the approval of the President, developing plans for fulfilling approved requirements and priority determinations, and recommending implementation responsibilities.

To assist him in carrying out the Executive Agent responsibilities, the Secretary of Defense established, within the DOD, two positions: Assistant to the Secretary of Defense for NCS and Manager, NCS. The

Assistant to the Secretary of Defense for NCS was designated as the principal advisor to the Secretary of Defense on NCS matters. These functions subsequently were assigned to the Assistant Secretary of Defense (Administration) and have been carried out by a small staff within that office.

The Secretary of Defense designated the Director, DCA, to also serve as the Manager, NCS, and delegated to him the responsibility for the principal unified technical planning toward establishing and developing the NCS. The Vice Director of DCA is designated as Vice Manager, NCS, and a DCA civilian employee serves as the Deputy Manager, NCS. The Deputy Manager has become the principal participant in carrying out the DOD military and civilian personnel plus day-to-day activities of the NCS. A relatively small staff composed of personnel on loan from various Civil agencies assists him.

The Presidential memorandum provided that the Administrator of GSA, in addition to participating as an operating NCS agency, would continue to have responsibility for the FTS and be responsible for establishing arrangements to avoid duplication in requests for cost, traffic, and other information needed from agencies served by the FTS. It also provided that the Administrator's responsibilities under the Federal Property and Administrative Services Act of 1949, as amended, for telecommunications services would remain unchanged.

The BOB was directed to prescribe general guidelines and procedures for reviewing the financing of the NCS within the budgetary process and for preparation of budget estimates by the participating agencies.

At the time NCS was established, the President designated the DOD, the DOS, the GSA, the FAA, and NASA as the major operating agencies of the NCS. All Government agencies were directed to cooperate and assist in performance of NCS functions.

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## CHAPTER 5

### NCS OBJECTIVES ACCOMPLISHED

Because the Presidential memorandum directed that,

"...initial emphasis in developing the NCS will be on meeting the most critical needs for communications in national security programs, particularly to overseas areas..."

the NCS staff's primary efforts have been devoted to the emergency and national security aspects of the Government's telecommunications. The staff has undertaken and accomplished many tasks that appear to have enhanced and improved the Government's ability to provide communications during periods of emergency and crises conditions.

The more significant accomplishments of these efforts are:

1. Development of a uniform circuit restoration priority system for restoring circuitry interrupted to and between overseas areas as well as within the United States.
2. Establishment of a Washington area secure high speed facsimile system connecting the White House with the military, diplomatic, and intelligence communities.
3. Agreement on contingency plans for the use of the NCS minor operating agency networks.
4. Establishment of an NCS Emergency Action Group (NEAG) comprised of representatives of the SAPT, Executive Agent, Manager, NCS, and all NCS operating agencies to assist the Manager in directing the application of NCS assets and in providing advice and assistance to high level Government officials in emergency conditions.
5. A continuity of operations plan to help assure continuance of Manager, NCS, and NEAG functions in emergencies.
6. A test and exercise program providing a means of evaluating effectiveness and performance of the Government's communications networks under all conditions.
7. Provision for adequate emergency power to Government and carrier communications facilities.

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8. Establishment of improved communications to and within many of the overseas areas.
9. Publication of a limited number of operational performance objectives, technical policies, and standards.

These accomplishments relate chiefly to assuring availability of communications during times of emergency. In addition, some progress has been made in the interconnection of agency networks. For example, DCA and GSA agreed to the interconnection of the AUTODIN and ARS networks for exchange of digital message and data traffic. The agreement provides for interconnection of the three message switches of the Advanced Records System (ARS) with three adjacent AUTODIN message switching centers. It is important to note that the interconnection is used for the exchange of message traffic only, not for purposes of alternate routing, due in part to security restrictions.

Other interconnects exist for exchange of record traffic between switching points and base stations of the DCS and the ARS, DOS, NASA, and FAA networks. Messages transiting some of these facilities are not relayed automatically but are handled on a manual basis, due to procedural, economic and technical reasons.

Although there has been emphasis on interconnection of DOD's AUTOVON and the GSA's FTS voice networks, only tie-line service exists between GSA and military switchboards in certain locations. No interconnection between the automatic switches of these networks has been achieved or was planned. This interconnection is the subject of current studies.

In addition to these accomplishments, it is generally recognized that the NCS structure has provided a forum for the interchange of ideas between



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representatives of the operating agencies and that it is a focal point for the formal coordination of policy, technical and operational matters of concern to the various component agencies.

## CHAPTER 6

### NCS OBJECTIVES TO BE ACCOMPLISHED

Although the President directed that first priority in developing the NCS be given to meeting the most critical communications need in national security programs, he also stipulated that,

"As rapidly as is consistent with meeting critical needs, other Government needs will be examined and satisfied, as warranted, in the context of the NCS."

Early in 1967 a study group comprised of NCS staff members and representatives of the NCS major operating agencies made an appraisal of the NCS. In their report of July 11, it is stated that the NCS, as a union of long-distant point-to-point networks, should meet the stated objectives through increased emphasis on

- unified planning,
- development and application of operational and technical standards,
- mutuality of support concepts, and
- interconnection of the several systems.

The report pointed to an urgent need for enhancing the effectiveness of the current system design through greatly accelerated action in five areas:

1. Closer collaboration among all operating agencies in systems planning in order to meet NCS objectives in the most economical and effective manner and to avoid unnecessary duplication.
2. Interconnection of the major switched networks, and where appropriate, automatic interface should be provided.

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3. Development and implementation of appropriate operational, procedural, and technical standards for interconnect purposes.
4. Development of survivability criteria to meet the requirements specified by the President.
5. Development and application of procedures for exercising emergency control of all surviving NCS telecommunications assets.

The report also pointed out a need for greater emphasis on collaboration in systems planning in such areas as utilizing facilities in support of civil defense and continuity of Government programs and locations; Federal/State cooperation and assistance; secure voice program; communications privacy as a National problem; and emerging satellite techniques and capabilities.

While many of these objectives or problems have been formally identified as NCS tasks and have been pursued by the NCS working groups, many remain to be resolved. Among these is the achievement of greater unification of the various agency networks. The emphasis given this objective and the efforts undertaken to accomplish it are discussed below.

#### Unification of agency networks

In commenting on the second NCS long-range plan, the Special Assistant to the President for Telecommunications (SAPT) advised the Executive Agent by letter of October 31, 1966, that substantial progress had been made toward attaining the stated NCS objectives. However, he said that a greater degree of unification was needed to meet the concept as prescribed in the documents which established the NCS.

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He stated that:

"\*\*\*It now is appropriate to develop a longer range system design for the NCS. An essential first step is the formulation of a concept of a system configuration to attain the optimum degree of operational effectiveness in the 1970-1980 time frame with due regard to technological and economic factors.\*\*\*"

As a result of this direction, a task group was established to study and recommend a concept for the system configuration of the NCS for the decade of the 1970's. The Manager, NCS, and ten of the eleven agencies participating in the study agreed that a feasible concept for the NCS would feature an integrated trunking system and multi-purpose and special-purpose networks. The DOD did not agree, saying that the study did not provide sufficient technical, operational, and economic detail for a rational decision on an optimum NCS system design configuration.

The Manager, NCS, forwarded the study report to the NCS Executive Agent (i.e. The Secretary of Defense) on August 2, 1968, noting the non-concurrence of the DOD. The Manager agreed that follow-on design studies were required but that approval of the concept would enable the NCS to hold the proposed studies within manageable bounds in order to determine the degree to which the concept proves to be technically feasible and which of the many variations of the concept is best. He added that the manpower and skills required for the follow-on studies were far beyond that available to him and that he intended to utilize contractual assistance (\$240,000) for that purpose. He further noted that management arrangements for the selected concept would also require more definitive study.

On August 12, 1968, the Assistant Secretary of Defense (Administration), acting for the Executive Agent, forwarded the study report to the SAPT.

He restated DOD's nonconcurrence and added that a recommendation of a

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suitable concept would be submitted after completion of detailed studies,

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including a study by American Telephone and Telegraph Company on the integration alternatives for nonsecure voice networks of DOD's AUTOVON and GSA's FTS.

Replying October 9, the SAPT agreed that the adoption of a concept was premature. He judged the arrangements proposed by the study would be an unavoidable phase in any realignment which might be indicated by further study. He recommended that the initial thrust of the follow-on studies be directed toward the analysis of that alternative.

In his letter the SAPT said:

"As it is essential that all of the communications assets of all of the agencies of the Government be considered potential parts of the NCS, this study effort should not be limited to consideration of presently identified NCS assets. It is equally important that the recommended management organization be such as to fully support the chosen concept and ensure that it be administratively, technically, and operationally effective. In this connection, consideration of management alternatives should not be constrained by the present structure of the NCS.

"It seems clear that if national needs are to be served, the NCS must be viewed as an entity and not a confederation of networks. Consequently, establishment of a single integrated system under a single manager, singly financed, may well be the ultimate long-range objective. I would hope that the studies undertaken give due consideration to this possibility."

As a result of this further direction, the NCS staff developed a proposed work statement for undertaking, through contractual arrangements, the further study effort directed by the SAPT. This statement was being coordinated with the NCS operating agencies at the conclusion of our study (March 1969). Since it seems likely that DOD will continue its opposition to the proposed integrated trunking system without further study, agreement on a feasible concept for the NCS may not be reached in the foreseeable future.

CHAPTER 7

BENEFITS ACHIEVABLE FROM  
NETWORK UNIFICATION

During early 1960, GSA undertook a study looking toward the integration of all existing communications systems on the civilian side of Government with certain exceptions. The study, in which 53 departments and agencies participated, was completed in June 1960 and showed that it was feasible to establish a unified FTS.

The system contemplated the provision of telephone, teletypewriter, facsimile, and data service for both peacetime and emergency use with automatic switching. Also contemplated were capability to transmit secure telegraph, data, and voice and reduction of vulnerability by various means. It was further contemplated that the system would be installed in a series of steps starting with the combination of facilities in selected areas to provide service improvements.

After further legislative and executive action, the voice portion of the FTS was activated in fiscal year 1963 and in fiscal year 1966 for the record or ARS portion of the FTS. Although GSA's 1960 study indicated that the implementation of the FTS would cost over \$5 million more than was then currently being spent by the agencies involved, the Government has realized substantial savings by the use of the FTS. For example, the Administrator's annual reports show that savings, as compared to regular commercial costs, during fiscal years 1967 and 1968 amounted to \$64 million and \$79.5 million, respectively. Furthermore, these savings have been achieved, and at the same time, services have been substantially improved, according to a GSA official.

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A similar action was taken by the DOD when it recognized that its long-haul communications facilities required rapid streamlining and updating to satisfy expanding and more complex requirements. The records we reviewed indicated that, the military services were proceeding to plan, develop, and upgrade their own extensive and costly networks with little thought to compatibility between their systems.

In May 1960, the DCA and its DCS were established by the Secretary of Defense as the single communications system to meet all DOD's long-haul, point-to-point, telecommunications requirements. This action and subsequent modifications were intended to bring together, under a single manager, the widespread, complex, diverse and costly long-haul communications of the military departments.

During the ensuing years, DCA has identified a substantial number of special purpose or dedicated networks within the military services and many of these have been consolidated or integrated into the common user portion of the DCS resulting in significant reductions in DOD's total annual costs.

The American Telephone and Telegraph (AT&T) study, referred to in Chapter 6, is an indepth study on behalf of the telephone industry at the request of NCS to examine alternatives for the interconnection of AUTOVON and FTS within the United States during the period 1967 to 1988. One of the alternatives was the continuation of present arrangements. Although this initial study has, according to NCS officials, some defects in assumptions and other shortcomings, analysis indicates that at least three and perhaps four alternative arrangements are likely to yield significant cost advantages over the present separate AUTOVON and FTS arrangements. The range of potential savings may amount to millions of dollars a year.

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The NCS is presently negotiating with AT&T to clarify some of the apparent defects in the initial study and to enlarge the scope of their studies to include requirements not included in the initial phase. The ultimate decisions for combining the systems remain to be resolved.



CHAPTER 8

POTENTIAL CANDIDATES FOR UNIFICATION

In addition to the actual and pending network unification actions discussed above, we were able to readily identify two other situations which appear to be potential candidates for further unification consideration. We found that the NCS staff had examined into both of these cases; however, its efforts were not successful in one case and actions on the other one have been deferred for subsequent consideration. The particulars of the two cases are briefly discussed below.

Shortly after the establishment of the NCS was directed in August 1963, one of the first efforts undertaken within the NCS in connection with large scale communications support problems was an examination of the civil and military weather data communication complex. A group was established with representation of weather data user agencies and given the responsibility of developing a definitive statement of national quantitative weather-information requirements and a concept of operations for a unified national weather digital communications network as a component of the NCS.

The study group issued its report on November 30, 1963, and proposed the development of a digital automatic weather and notice to airmen (NOTAM) system which would meet all user requirements. The group concluded, among other things, that (1) the then existing weather and NOTAM communications were not adequate for existing user agency requirements, (2) the user agency requirements were increasing and would continue to increase through 1976, (3) the integration or expansion of the then existing systems using available plant would not be practicable or

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economical, and (4) a new system could be evolved which would meet the national user agency requirements using on-the-shelf components.

The study group pointed out in its report that the separate annual operating costs for weather teletype networks of the several operating agencies totalled \$9.2 million--\$4.9 million for the Air Force, \$3.9 million for the FAA, and \$0.4 million for the Weather Bureau. It was also recognized that the then existing weather communications systems were largely saturated and in urgent need of emergency action to provide additional capability; particularly in the FAA and Air Force systems which disseminate weather information required for aircraft operations.

The report set forth the user agencies' requirements in general terms and recommended a concept of operations for a single national network with the principal milestones for system implementation and use commencing in 1967. The Manager, NCS, submitted the report to the NCS Executive Agent (the Secretary of Defense) pointing out that the agencies involved concurred in the proposed actions, recommending approval and that appropriate actions be taken to undertake establishment of the system.

The Executive Agent, in the process of formally coordinating the report with the operating agencies, submitted a copy to the Office of the Deputy Director of Defense Research and Engineering (DDR&E) on February 13, 1964, to obtain the DOD position on the proposed course of action. DDR&E coordinated the report with the Chairman of the Federal Committee for Meteorological Services and Supporting Research. The Chairman decided that the newly formed Federal Coordinator for Meteorological Services and Supporting Research (OCFM) should review the report. These actions finally resulted in the DOD comments on the report being forwarded to

the Executive Agent on October 2, 1964. On November 13, 1964, the Executive Agent advised the Manager to further examine the new courses of action recommended by the OCFM.

As a result of this delay, interim improvement programs of the weather communications networks of the FAA, the Air Force, the Navy, and the Weather Bureau, had increased in scope to the extent that the establishment of a single system to serve all the agencies' weather communications needs as originally planned, was no longer desirable. The separate weather networks continue to be operated by the various Federal agencies.

While the outcome of the NCS Manager's efforts might be viewed largely as a failure, a newly established NCS working group continues to work on a task with the stated objective "To develop a National Weather Communications System which will meet the requirements of the users for the foreseeable future."

In another case, we learned that GSA's FTS voice network is not used nor was it intended to be used by DOD activities located in the metropolitan Washington, D.C., area for placing outgoing telephone calls. Instead, DOD activities in this area are provided telephone service through its own Defense Telephone Service (DTS). The DTS includes some 37,000 working lines and 87,000 extensions and provides service to 178 buildings located in Washington and surrounding areas. Outgoing long-distance service is obtained through any one or a combination of four services available to the DTS. These include AUTOVON and a variety of commercial toll services.

The DOD, at the request of the Manager, NCS, made an analysis of costs and benefits which might result from use by the DTS of the outgoing facilities of the FTS. The DOD's analysis indicated that under busy conditions, the operators routed approximately 1,000 "overflow" calls over the commercial toll network. Their analysis also indicated that the cost of handling this "overflow" DOD traffic on GSA's FTS voice network would not be less than the present DOD cost via the commercial toll network.

The Manager, NCS, in an October 1968 report to the Executive Agent, concurred in the analysis and concluded that the matter be considered further in the course of the AT&T study of the interconnection of AUTOVON and FTS.

**DRAFT**CHAPTER 9PROBLEMS HAMPERING ACCOMPLISHMENT OF NCS OBJECTIVESAuthority and policy guidance

In his memorandum of August 21, 1963, directing the establishment of the NCS, the President also set up the management structure to carry it out. Essentially, this was a two-level organization with the DTM at the policy level and the Executive Agent for the NCS at the design and operational planning level.

At the policy level, it appears that the position of the DTM is ambiguous. He heads the Office of the Directorate for Telecommunications Management. This office is a component of the OEP in the Executive Office of the President. The President assigned the DTM to also act as the SAPT to advise and assist him with respect to telecommunications requirements and plans for the NCS. However, although subject to the control and authority of the President, the DTM position is held by one of the Assistant Directors of the OEP.

The charter (authority and responsibility) of the DTM is impressive, if considered alone, but it is almost emasculated by the welter of laws, orders and policies affecting telecommunications activity of the Federal Government, that have been promulgated over the past several decades. The many Executive agencies individually have a wide range of mission oriented responsibilities in the telecommunications field. These widely dispersed responsibilities are frequently interdependent and when conflicts arise, require authoritative interpretation, clarification, and solution.

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The basic weakness of the present telecommunications management arrangements seems to be the doubt that has been created as to whether the DTM is directly responsible and responsive to the President. The DTM is administratively a part of OEP, an organization which, in emergency situations, is a rival of other departments and agencies in claims on the national telecommunications resource. Rules and regulations issued by the DTM appear to be OEP directives. Thus, other agencies would appear to be subject to the authority of a rival claimant (the OEP) on the national telecommunication resource on matters pertaining to that resource, when the DTM issues authorized and necessary rules and regulations.

This doubt exists among the departments and agencies, in Congress, and among industrial and other leaders. The fact of this doubt diminishes motivation to the doubters to respond to DTM inquiries or suggestions, and to attempt to resolve differences in the national interest under the aegis of the DTM.

Although funding has increased over the years to a little under \$2 million for fiscal year 1968, a DTM study report of April 1968 indicates that funding in the amount of \$12 or \$13 million per year is required if the DTM's responsibilities are to be fulfilled.

Furthermore, the staff of the DTM is assigned from OEP, or on loan from other agencies, and funds provided to the DTM are controlled by the OEP. In summary, the DTM does not have control over his staff or his funds and the placement of his position creates doubt as to his stature and authority.

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At the design and operational planning level, the position of the Executive Agent is conflicting. The President designated the Secretary of Defense as the Executive Agent for the NCS. Thus, as Secretary of Defense, he is responsible for the telecommunications of that department while, as Executive Agent, he has the broader responsibilities of the NCS.

The Secretary of Defense has designated the Director of the Defense Communications Agency as the Manager of the NCS and delegated to him the NCS design and operational planning functions. But this merely compounds the conflict-of-interest problem because the Director, DCA, has responsibilities for telecommunications of that agency as well as the broader responsibilities of the NCS.

At the time of our study the Office of the Manager, NCS, had a staff of 52 people. We were advised that this staff does not include the necessary systems engineering capability or support required to design and plan the NCS and to review the agency implementation.

This organizational structure and placement of the design and operational planning function in the Defense establishment promotes the appearance, if not the actuality, that the DOD "runs the show." This impression appears to have created a fear of DOD domination among some

agencies having critical telecommunications needs, notwithstanding the fact that full-time senior representatives of the major operating agencies are colocated with the Manager, NCS, for coordination purposes.

The absence of a centralized source of policy guidance, the widespread dispersion of authority and responsibility, and lack of stature and resources to provide effective management, has, in our opinion, resulted in the inadequate and ineffective planning discussed in the following subsection of this report.

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Planning for unified NCS

The NCS design and planning efforts consist of the preparation of annual long-range (five-year) plans and the performance of studies (referred to as tasks) in selected areas. However, these efforts appear to be inadequate and ineffective for the accomplishment of the system design and planning of a unified NCS. The annual long-range plan is a time consuming exercise requiring the coordination at various levels of agencies involved and is little more than a consolidated annual report of individual agency plans and a progress report on study tasks. The study tasks are staffed on an ad hoc basis rather than on a fully staffed basis in a continuing NCS oriented frame-of-reference.

In the annual long-range plans, the Manager, NCS, is supposed to present and cost alternative ways of satisfying user requirements. However, this is rather difficult to do after he has been given a set of individual agency component plans which are already firmly established. Also, he would need a system engineering staff that would have raw requirements data and detailed component network data before they could design and cost alternatives. Neither the staff nor the data are presently available. As a result, the Manager, NCS, cannot significantly influence the plan, the engineering of the component networks or the engineering of the NCS itself and the long-range plan is not, therefore, a blueprint for a unified NCS but merely a consolidation of individual agency component plans.

NCS's design and planning efforts also include study tasks which have been established to analyze NCS problems in selected areas. These



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study tasks are important system planning efforts requiring a high level of system engineering support. However, the Manager's office is not staffed to perform the large scale engineering efforts required for the design and planning of the current, much less the future, NCS. Consequently, design and planning study tasks are performed under other arrangements.

These arrangements include ad hoc task groups formed from personnel representing the NCS operating agencies. However, it appears that this arrangement is largely ineffective because of the parochial interest and agency network orientation of the agency representatives rather than a continuing NCS oriented environment.

We were advised that a concept is not an engineered solution and that it is impossible to tell whether the concept is good or bad or whether there are better concepts until engineering studies are carried out. The system engineering process in an on-going dynamic telecommunications environment is a continuing reiterative process covering the life cycle of the system. We were also advised that an ad hoc group might arrive at a concept in a specific problem area, but to make the concept a living dynamic reality, a system engineering team must remain together; it cannot be fragmented, have divided loyalties, and be turned on and off at will.

Thus, efforts are being made to develop a blueprint for the future NCS, but progress has been slow and extensive additional studies will be required. Moreover, since the operating agencies design and fund their components of the NCS, the absence of some control of agency telecommunications funding actions acts as an additional constraint to effective planning, as discussed below.

In his memorandum of August 1963, directing the establishment of the NCS, the President directed that,

"\*\*\*The Bureau of the Budget, in consultation with the Special Assistant to the President for Telecommunications, the Executive Agent and the Administrator of General Services, will prescribe general guidelines and procedures for reviewing the financing of the NCS within the budgetary process and for preparation of budget estimates by the participating agencies.\*\*\*"

Apparently, it was the intent that a budgetary overlook of NCS activities should be made. However, we were advised by BOB officials that it is virtually impossible at present to obtain an accurate figure of NCS costs and data on activities. ✓

Subsequently, BOB issued a series of bulletins establishing a Planning, Programming, Budgeting System. These bulletins were, however, general directives, not specifically addressed to the problem of coordinating the budgeting and planning for telecommunications.

In 1966 the Director, BOB, proposed the establishment of an NCS resource inventory which would describe the physical assets, the service provided, and the total funding and manpower for each of the networks comprising the NCS. This was based on the belief that the incorporation of this information into future NCS component plans and long-range plans would permit achievement of a better perspective and appraisal of contemplated component programs and the composite total. The Director stated that, where warranted, it would facilitate analysis in depth of alternative ways of satisfying user needs.

Submissions prepared by the operating agencies during calendar year 1967 do not appear to have been entirely adequate in providing an overview of the Government's annual telecommunications costs. We were ✓

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advised by NCS officials that additional guidance for application of budgetary overlook features in the NCS planning process would be submitted to operating agencies as part of the next call for component plans.

Thus, it appears that the NCS design and planning effort is unequal to its task; a blueprint for the future NCS does not exist; and even if such a blueprint existed, there is no authoritative overview to assure that agency planning and funding would conform to the overall plan.

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## CHAPTER 10

### PERPETUATION AND PROLIFERATION OF AGENCY TELECOMMUNICATIONS NETWORKS

The NCS, as it has evolved, is basically a federation of the several Executive department and agency telecommunications networks. Although these networks are labeled and identified as NCS assets, the parent agencies remain solely responsible for designing, planning, funding, operating, and maintaining the networks largely for the fulfillment of their respective department or agency mission. Only GSA, among the NCS operating agencies, has the prime objective of furnishing telecommunications to satisfy requirements of other Government agencies rather than to support its own operations.

The Manager, NCS, by delegation of the Executive Agent, is charged with designing the NCS, for the approval of the President. Although this requires the Manager to take into consideration the communications needs and resources of all Federal agencies, he has actually little, if any, participation in or influence over the plans and ultimate decisions of the agency heads affecting their telecommunications networks. This lack of NCS involvement has resulted in perpetuation and proliferation of agency networks and, to some extent, appears to have placed some agencies in competition with each other and brought about a pronounced separation among the various telecommunications networks.

A wide division has evolved and exists today between the DOD and GSA in satisfying the telecommunications requirements originating with the DOD activities and those within the Civil departments and agencies. Although much of the telecommunications requirements of the Civil and Defense departments and agencies are similar in many aspects, the general practice is that Defense requirements are considered and satisfied within the networks of the

DCS, and the Civil requirements are likewise considered for satisfaction through the FTS networks operated and managed by GSA. Also, as this report has shown, separate networks have been established outside of the DOD and GSA common-user networks.

We briefly examined into the manner in which the communications requirements originating <sup>in</sup> certain Federal agencies were being satisfied in four cases and the extent to which the NCS staff became involved. Two of the cases concerned telecommunications requirements of activities of the DOD and two involved requirements of Civil agencies in which GSA becomes involved.

The two DOD systems have Defense-wide application and involve the development and implementation of a Joint Uniform Military Pay System (JUMPS), by the Assistant Secretary of Defense (Comptroller), and a Defense Services Center Integrated Data System (DIDS), by the Defense Supply Agency (DSA). The civil agency requirements involved the establishment of an AEC Secure Automatic Data Information Exchange Network (SADIE) and a Veterans Administration (VA) Data System (VADATS) for the exchange of data related to veterans within and between the activities of the VA. The systems and the satisfaction of their telecommunications requirements are discussed below:

1. JUMPS has as its primary goal the establishment, within each of the military services, of a military pay system at a single operating site for each service that will provide (a) adequate service to members, (b) maximum uniformity between the military departments, (c) authorized and

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computerized pay account maintenance, and (d) optimum support of the planning, programming and budgeting systems. The DOD implementing directive provided, as one of the policies for JUMPS, that communication methods, including AUTODIN (DOD's automatic digital data network), appropriate for the data involved, would be used between disbursement and input sites and the centralized operation.

2. DIDS is an elaborate integrated logistical management system to provide for the dissemination to users of improved item characteristics and management data suitable for multiple logistical purposes such as procurement, cataloging, provisioning, material utilization and disposal. The communication needs for DIDS were furnished by DSA for inclusion in DCA's Development Plan for the DCS during the 1970-1980 time period. DCA analyzed the requirements and subsequently advised the military services and DSA that the DIDS traffic could be accommodated in the AUTODIN system and that additional equipment would only be required at 14 of the 196 proposed tributaries.

For effective operation of the JUMPS and DIDS systems, a large amount of information or data must be exchanged between the involved activities by means of communications processing and distributing systems. Although the telecommunications requirements have not been firmly established, it appears highly likely that the requirements for both systems will only be considered for and satisfied through DOD's AUTODIN system.

3. In 1966, AEC undertook a project to develop its own secure automatic data information exchange network through the combination of two of its existing networks and modification and expansion of the resulting

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network. Since AEC is a civil agency of the Government, GSA became involved and after analyzing the proposal, GSA granted its concurrence to the proposed plan. According to the records we examined, the Manager, NCS, was not formally apprised of the requirement until AEC submitted its plans for developing the system in May 1967 and was therefore not involved in the decision to allow AEC to develop its own network. We found that AEC did give consideration to using DOD's AUTODIN network, GSA's advanced record system, as well as two of its own existing systems. AEC concluded that their requirements could best be satisfied through the development of its own improved system.

4. During the course of our study, we became aware of an attempt on the part of the VA to establish its own dedicated data transmission system (VADATS) to meet its known and anticipated needs for data and administrative traffic handling in the FY 1971 - FY 1976 time period. VA submitted its proposal to GSA on January 8, 1969, in which VA stated that in order to realize both savings and provide for advanced data processing techniques in support of the mission of the VA, it was necessary that the VA have a record telecommunications system, providing for automatic interchange of data between automated programs, encompassing as a minimum the capability of handling administrative traffic, on-line fast response information retrieval, visual display and the handling of such traffic as error free as possible through error detection and correction through retransmission.

VA stated that GSA's advanced record system as it was presently configured would not provide for the VA needs in FY 71 - 76 time period and proposed that (1) with the assistance of GSA, the VA establish the system

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with installation to be started in July 1970 and completed during FY 1971 for all field station locations, (2) that the system be operated, funded, and managed by the VA within the parameters of the GSA Federal property management regulations and NCS directives, and (3) immediate actions be taken on its recommendations.

GSA replied to the proposal on January 17, 1969, in which the VA was advised that GSA had no doubts regarding its ability to meet the VA requirements on the existing record or voice subsystems of the FTS at the least possible cost to the Government, as well as to the VA. However, GSA also stated that it continued to recognize and agree with VA's desire to fully explore the cost effectiveness, both to the Government as a whole and VA singly, of all feasible alternatives for meeting VA's requirements before making a decision.

GSA proposed that further steps be taken to obtain information upon which a more comprehensive cost effectiveness evaluation could be made of the feasible alternatives that exist with the intent of reaching a decision and proceeding with procurement. GSA pointed out that its proposed course of action was contingent upon GSA controlling the message switch, as well as all switched circuitry that may be utilized.

The ultimate decision as to whether the VA requirement will be satisfied through the establishment of a separate dedicated network or through one of the two existing FTS subsystems remains to be resolved.

We did not perform an in-depth review of the cases cited above and are not in a position to render an opinion over the course of actions taken or proposed to satisfy the requirements. The cases do illustrate, we believe, the little participation and influence the Manager, NCS and his staff



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have over the telecommunications requirements originating throughout the Government, as well as the manner in which the requirements are being satisfied. The cases also seem to show that without a long range overall Government-wide plan or concept for achieving a more unified Governmental telecommunications system, further and more widespread perpetuation and proliferation of the agency networks are likely to occur.

**DRAFT**CHAPTER 11PRESIDENTIAL AND CONGRESSIONAL CONCERN FOR TELECOMMUNICATIONS PROBLEMS

The President and the Congress have been concerned with problems of national communications policy and the Government organization to carry it out. For example, in his message to the Congress August 14, 1967 the President announced that he was appointing a Task Force of distinguished Government officials to make a comprehensive study of communications policy and that he had asked the BOB to make a thorough study of existing Government organization in the field of communications and to propose needed modifications. Both of these studies have been completed but the reports were not made available for our review.

Similarly, Committees and Subcommittees of the Congress, including the Subcommittee on Administrative Practice and Procedure of the Senate Committee on the Judiciary, the Senate Committee on Commerce, and the House Committee on Government Operations have repeatedly expressed their concern with various communications problems.

For example, the Senate Committee on Commerce in its report No. 837 (88th Congress, 2nd Session) of January 30, 1964, stated:

"\*\*\*Fast moving technical developments and expanding needs in the communications field require a review of our present policies\*\*\*  
The question of the establishment of an overall telecommunications policy has been raised by the Committees on Commerce on a number of occasions. Such policy is essential if we are to meet the current and future needs flowing from the technological developments of the space age.\*\*\*"

The House Committee on Government Operations in its report No. 178 (89th Congress 1st Session) of March 17, 1965, took note of the evolution of arrangements within the executive branch for telecommunications management since the Radio Act of 1912, and of some of the many studies of these arrangements which have been conducted. The report stated:

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"\*\*A comprehensive review of governmental responsibilities in communications has been called for repeatedly by various sources, both Congressional and private. The staff arm of the President requires added strength and separate organizational status to review the broad issues and policies that clearly require more emphasis and resolution. Only limited resources in men and money are now available to the Office of the Director of Telecommunications Management. The Office should be removed from the Office of Emergency Planning and be reconstituted as a separate unit in the Executive Office of the President. It should be funded and staffed to permit essential studies and coordination to be conducted more effectively than has been possible so far.\*\*"

The House Committee on Government Operations in its report No. 2313 (89th Congress, 2nd Session) of October 19, 1966, affirmed for the third time its belief that the DTM should be reconstituted as a separate coequal unit in the Executive Office of the President rather than remain a subordinate unit of OEP. The report stated,

"\*\*\*It is our understanding that the President is reluctant to expand the structure of the Executive Office. The Committee believes that a much more compelling consideration is the new and growing importance which telecommunications management has assumed in Government affairs.

The submission to the Congress of a reorganization plan to give the telecommunications office separate status, coequal with the Executive Office units for national security, economic, scientific, emergency mobilization, and budgetary affairs, will have the added advantage of providing a statutory base for the Director in dealing with the Congress. At present his nonstatutory role of presidential advisor makes relationships with the Congress a sensitive issue and creates uncertainties as to what he can convey to the Congress in the way of information. A similar issue was presented, and in a measure resolved, in the Office of Science and Technology, which was given formal status in the Executive Office by reorganization plan.\*\*"

Again on August 28, 1967, the House Committee on Government Operations in its report No. 613 (90th Congress, 1st Session) observed,

"\*\*The job of getting some kind of consensus among the contending parties falls to the Director of Telecommunications Management. His role is not the happiest one. The numerous problems to be studied outrun his limited resources in staff and funds. His authority in the Executive Office is anomalous, coming in part from the President and in part from the Director of Emergency Planning. He has the proximity of the President's power and prestige but stands at a distance from the great operating centers, such as the Department of Defense, where important decisions are daily made.\*\*"

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CHAPTER 12RECOMMENDATIONS

While our study showed that some progress had been made, it also showed that much remains to be done to achieve a unified NCS as the President directed in 1963. Our study disclosed that significant issues and problems exist within the NCS organizational structure and management arrangements, which appear to be impeding the timely achievement of the objectives and goals. Many of these issues and problems involve the very basic and essential ingredients we believe are needed to prosecute the unification of the various telecommunications networks existing within various agencies of the Government.

Of particular significance is the absence of any long-range plan or blueprint and centralized policy guidance within the Government which charts the course over which the telecommunications networks of the NCS operating agencies are to be unified. Without such a blueprint and accompanying guidance, the corresponding and equally significant function of planning is virtually impossible, and from a unification point of view, the operating agencies are not constrained from planning and developing their individual networks to best perform and fulfill the mission of the agency. Perpetuation and proliferation of the separate networks are inevitable. Although there are a few exceptions to this practice, such as the use of the Defense Satellite Communications System by other agencies, such plans more often are arranged through interagency actions rather than upon the basis of a long-range plan. ✓

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Organizationally, the present arrangements do not appear to be conducive to promoting the early achievement of the objectives and goals of the NCS. Although designated as the SAPT, doubt over the DIM's direction of telecommunications policies and actions has arisen and prevails today. The Secretary of Defense, as Executive Agent for the NCS, is often put in a difficult, if not untenable, position, for he is faced with making policy decisions affecting other Government telecommunications users, while at the same time, his department is itself the major claimant of the NCS resources. The position of Manager, NCS, appears to be a misnomer, since he actually doesn't manage anything other than a small staff that are on loan from various operating agencies, and his decisions are essentially subject to veto by any agency.

As stated previously, two studies on telecommunications matters were requested by the President in 1967. The studies have been completed but the reports were not made available for our review and we do not know whether the conclusions and recommendations of those studies agree with our own. Our findings and conclusions are stated above.

We, therefore, recommend that the President give consideration to:

1. Undertaking a major realignment of the existing

NCS structure and organizational arrangements. As the first and essential step, we propose that an organization or entity at the highest level of the Executive Branch of the Government and free of any conflict-of-interest, should be put in charge of the Government's telecommunications activities. The proposed organization or entity should be given sufficient resources and stature

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to enable it to provide the President and the Government with a strong central telecommunications authority which would enhance the development of the NCS and serve as the Government's single voice and final authority in telecommunications matters. ✓

The organization or entity should serve as the Government's focal point for telecommunications policy and planning. It should also possess sufficient authority to enforce policy determinations and to plan, coordinate and review actions of Federal agencies concerning telecommunications matters. A close liaison should be established with BOB for coordinating the financial requirements of the various NCS operating agencies. ✓

The organization or entity should have an active part in the deliberations over the establishment of new telecommunications capabilities or networks and serve as the final authority in the decision making process. It should be empowered to examine existing agency networks which might more economically and effectively satisfy requirements through modification or expansion. We believe the organization or entity should study the telecommunications networks that currently exist and give consideration to the economic aspects of consolidating them into Government-wide networks or systems and the possible eliminating of mission-oriented dedicated networks. ✓

2. That consideration be given to removing the Office of the DIM as a component part of the OEP and reconstituting this Office as the new organization or entity. This is in full agreement with the suggestions repeatedly made by the House Committee on Government Operations.

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3. To avoid the parochial interest and conflict-of-interest inherent in the present organization, consideration should be given to assigning the roles and functions of the Executive Agent and the Manager, NCS, to the new organization or entity.

19 MAR 1969

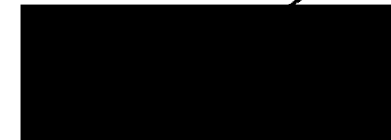
MEMORANDUM FOR: Deputy Director for Support

SUBJECT : GAO Report to the Congress on the Establishment of a  
Unified NCS

1. This memorandum is for your information.
2. Subject report is the result of a study conducted by a GAO Team of four over a period between 7 October 1968 and 17 March 1969, when the report was sent to the Director in draft form. It invites comments and requests that they be received by 17 May 1969.
3. This report has been given widespread distribution within the Executive Branch, as indicated in the attached memorandum forwarding it to the President. We have also been advised by the GAO Team leader that it is to be given to the House Appropriations (Mahon) Committee and the Subcommittee (Holifield) of the Committee on Government Operations. We have been unable to learn whether similar action will be taken with respect to the Senate. What information we have acquired leads us to believe that unless it is requested there will be no distribution.
4. There are two major recommendations:
  - a. Remove the Office of the Special Assistant to the President for Telecommunications from OEP and provide it with sufficient resources and stature to make it the ultimate single authority in government telecommunications matters.
  - b. To eliminate conflict of interest, the roles of Executive Agent, NCS (Secretary of Defense) and Manager, NCS (Director of Defense Communications Agency) should be assigned to the organization referred to in paragraph a above.
5. Based on the information and examples provided in the Report, these recommendations make sense and could be beneficial to the government as a whole if properly done. On the other hand, a hasty Executive Order creating a policy czar could create great difficulty for us and others.
6. The paper, whether deliberately or not, is antipathetic - to say the least - to mission-oriented telecommunications. Herein lies one of the dangers of this paper, especially if it is subject to hasty action by those who are either



proponents of a "single" system or of the common user cheaper-by-the-dozen school. By contrast, in a report of Federal Communications Organization recently completed by the Bureau of the Budget, the Bureau quite specifically acknowledges the importance of leaving operations responsibility with the principal agencies having mission-oriented telecommunications. This report will be the subject of further examination subsequent to the completion of an in-depth analysis of the GAO paper together with a proposed reply.



STATINTL

Director of Communications

Att:

cy of Memo to President fm GAO

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